Plan Chk. No. _____

City of Scottsdale

Commercial Energy Compliance
International Energy Conservation Code

(Scottsdale Ordinance # 3505)

The city adoption of the 2003 edition of the International Building Code (IBC) and International Energy Conservation Code (IECC) contain energy efficiency requirements for newly constructed and renovated commercial buildings. Compliance must be demonstrated by either meeting the requirements of ASHRAE/IESNA 90.1 or one of the following methods in accordance with Chapter 8 of the IECC for building envelope, mechanical and lighting systems:

1. Prescriptive Approach - For the building envelope, a prescriptive approach would list the minimum R-value or maximum U-factor requirements for each building component, such as windows, walls, and roofs. For lighting systems, this approach lists the allowable watts per square foot for various building types. For mechanical systems and equipment, the prescriptive approach lists the minimum required equipment efficiencies. This approach is quick and easy to use, but may be somewhat restrictive because the requirements are based on worst-case assumptions.
2. Trade-Off Approach - A trade-off approach allows you to trade enhanced energy efficiency in one component against decreased energy efficiency in another component. These trade-offs typically occur within major building systems-envelope, lighting, or mechanical. You can, for example, trade decreased wall efficiency (lower R-value) for increased window efficiency (lower U-factor). For lighting systems, the trade-off typically would occur between proposed lighting fixture wattages in various spaces within a building. The only trade-off allowed for mechanical systems and equipment is found in Chapter 8 of the IECC. You may trade off higher cooling equipment efficiency against a requirement for an economizer. The trade-off approach is less restrictive than the prescriptive approach because you describe the actual building design in the trade-off approach and may adjust individual component requirements.
3. Performance Approach - A performance approach allows you to compare your proposed design with a baseline or reference design and demonstrate that the proposed design is at least as energy efficient as the baseline in terms of annual energy use. This approach allows great flexibility but requires considerably more effort. A performance approach is often necessary to obtain credit for special features, such as passive solar, photovoltaic cells, thermal energy storage, fuel cells, and other nontraditional building components. This approach requires an annual energy analysis for the proposed and the reference buildings.

Plan Chk. No. _____

Commercial Energy Code Compliance Worksheet

2003 International Energy Conservation Code (IECC)

Project Name _____ Date _____

Project Address _____

Submitted By _____ Phone Number _____

I. Envelope Compliance Options (check one)

☐ **Trade-Off** – Attach software Compliance Report (COM*check-EZ* software tool for 2000 IECC - free download at www.energycodes.gov/index.stm)

☐ **Total Building Performance** (IECC Section 806) - Attach Registered Architect's or Engineer's report

☐ **Prescriptive Tables** (IECC Section 802.2) - Complete this section

NOTE: Buildings with over 50% wall glazing must use ASHRAE/IES 90.1-1999 to demonstrate compliance.

a. Gross above-grade wall area _____ sq. ft.

b. Total window & glass door area _____ sq. ft.

c. Glazing % (100 x b ÷ a) _____ %

d. Table # utilized: _____

II. HVAC Options (check one)

☐ **Simple Systems & Equipment** (Sec. 803.2)

☐ **Complex Systems & Equipment** (Sec. 803.3)

} Attach Compliance Documentation (COM*check-EZ* report or other)

☐ **Total Building Performance** (Section 806) – Attach Registered Architect's or Engineer's report

III. Lighting Options (check one)

☐ **Entire Building Method** (Sec. 805.5.2.1)

☐ **Space-by-Space Method** (Sec. 805.5.2.2)

} Attach Compliance Documentation (COM*check-EZ* report or other)

☐ **Total Building Performance** (Section 806) – Attach Registered Architect's or Engineer's report

Statement of Compliance: The proposed building design represented in these documents is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the requirements of ASHRAE/IES 90.1-1999 or the International Energy Conservation Code.

_____ _____ _____

Architect or Engineer | Company Name | Date